

Interactive comment on “Unusual biogenic calcite structures in two shallow lakes, James Ross Island, Antarctica” by J. Elster et al.

Anonymous Referee #2

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General comments:

The present paper describes characteristics of unique organosediment structured from shallow Antarctic endorheic lakes. The paper is comprehensive and well written and I have only few comments. The thermal regime section (3.2) is too descriptive and unnecessary, given that majority of the information can be gathered by looking at Figures 3, 4 and 5. Having three figures (Fig. 3-5) showing seasonal changes in air and water temperatures is also unnecessary as well. I would recommend using only one figure and moving the others into supplementary materials. The biological characteristics of the organosediment structures (section 3.3) could be better described and better presented and would benefit from including light microscopy photographs of the different cyanobacterial and algal species. The discussion should be tightened up and some

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sections could be either entirely omitted or moved to the Results, particularly the descriptions of the environmental properties (section 4.1.). The discussion would benefit from adding a section discussing the possible origins of the structures as well as clearly describing the process of their formation. There are too many figures in the manuscript and some of them are not very informative and thus could be moved to supplementary materials.

Specific comments:

Page 13594, Line 26: Remove “on a range of spatial scales”

Page 13595, Line 3: Preclude the development of larger organisms

Page 13595, Line 4: Organosedimentary structures instead of Organisedimentary The sentence is not entirely clear

Page 13595, Line 14: related “to” rather than related “with” Sentence starting with Calcite is too complex and should be divided into several sentences

Page 13596, Line 6: Pleistocene and Holocene

Page 13596, Line 16: Missing “)” after Nedbalova

Page 13597, Line 12: Catchment areas would be more meaningful in km² than in m²

Page 13597, Line 15: How dramatically?

Page 13604, Line 17: FSD instead of FDS

Page 13608, Line 24: Please add reference for the trapping of the mineral grains

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